



MSCC

Construction Report

Michigan
State Capitol Commission

April 2017 Vol. I Issue I

Cooling Towers Temporarily Relocated to the South Lawn

On April 10 the Michigan State Capitol Commission began the process of temporarily relocating three cooling towers to the south lawn of Capitol Square. These towers are important components in the Capitol's chiller system—a sophisticated air conditioning—that keeps the Capitol building and the people working in it cool during the pressing heat and humidity of Michigan's summers. It's important not only for the comfort of the building's tenants, but also for the preservation of the Capitol's historic art and furniture collections, which are easily damaged by extreme temperature and humidity fluctuations.

The Capitol's modular chiller system is located in the sub-basement, where it cools water that is pumped through thousands of feet of piping that's carefully concealed behind historic decoratively painted walls and ornamental grates. The cooled water moves through the pipes to air handlers and fan coil HVAC equipment. At any one time in the summer there are about 6,000 gallons of water moving through the system.

That heat, though, has to go somewhere. When the water returns to the chiller system it is cooled once more, and the excess heat is removed through cooling towers. Until this project, those cooling towers were located in the sub-basement and covered with a large grate situated just southwest of the Capitol near the parking lot.

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Capitol Infrastructure Problems Growing

In 2016, following the end of the Michigan State Capitol Commission's extensive restoration of the Capitol's exterior stonework and iron dome, the MSCC turned its focus inward to the Capitol's infrastructure. The Commissioners knew that the Capitol's electrical, mechanical, plumbing, and fire suppression systems were at least 30 years old and nearing the end of their useful lifespans. What they didn't yet realize was just how close the building is to serious system failures that could have catastrophic repercussions.

The Capitol is home to complex electrical, mechanical, plumbing, and fire suppression systems that are vital to the day-to-day use of the building, the comfort of the Capitol's tenants, and the preservation of the structure. Most people who work in or visit the Capitol don't think too much about

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Heavy rain and snow on April 6, 2017, brought water rushing into the Capitol's south mechanical vault near an electrical box for the Capitol's irrigation system.

Image Courtesy of Mark McEwan

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Capitol Lighting Fixtures Photographed

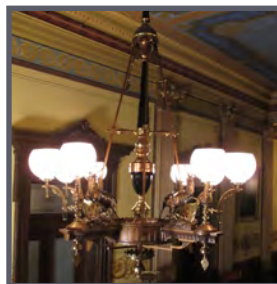
Michigan's Capitol is home to an impressive array of several hundred chandeliers, pendant lights, and sconces that are much more than lighting fixtures. They are functional art pieces, designed to reflect the grandeur of the Capitol and the Victorian era in which it was built.

Some of these fixtures, like the "Michigan" chandeliers and the crystal chandeliers in the House and Senate Chambers, are original gas lights that were adapted for electricity at the turn of the 20th century. Other pieces, like the crystal chandeliers in the Governor's Office and Parlor, are antiques from the Victorian era that did not originally hang in the Capitol. Many other lights were custom designed, fabricated, and installed specifically for the building during the Capitol's 1987-1992 restoration.

As part of a project to scan and photograph the Capitol, approved by the Commission in 2016, the MSCC hired an architectural photographer to document the Capitol's most significant fixtures. These include the fixtures in the rotunda, the main corridors, the House, the Senate, the old Supreme Court (Senate Appropriations)

and the Governor's Office. These photos will be an excellent record and source of information for future maintenance, preservation, and possible replication efforts.

Each photograph will be incorporated into the new Historic Building Information Model (HBIM), a virtual model that incorporates data relative to the Capitol's physical structure, mechanical systems, and historic finishes. They will also be catalogued and placed in the Capitol's historical archive.



A "Michigan" chandelier in the Senate Lobby.

Image Courtesy of Meadows & Co. Photography



The Senate Chamber as seen in the Capitol's Historic Building Information Model.

Image Courtesy of Quinn Evans Architects

Cooling Towers...

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The new temporary relocation of the cooling towers is a preemptory effort to move this equipment to an area where it will be protected from any future construction projects. The towers will be relocated during a long weekend to ensure that cooling services are not interrupted for a significant period of time.

The project is set to be completed in early May. The towers will remain in their new location until the Capitol Infrastructure Upgrade Project is complete.

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Capitol Infrastructure..

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these systems as long as they are working properly. After all, they are tucked into the sub-basement, and in crawl spaces behind walls and ceilings where most of us never go. But the Capitol's staff, tasked with maintaining the systems and caring for the building as a whole, knew that a variety of problems were beginning to reveal themselves.

These problems seemed, at first, unrelated. There was a glycol leak above the Governor's Office that damaged a section of the original hand painted parlor ceiling that dates to the late 1880s. Original House Chamber desks custom manufactured for the Capitol in 1878 began to crack. Pumps were leaking in the sub-basement, and water damage was becoming visible in the plasterwork around multiple fire sprinkler heads.

Alarmed, the Commission voted to bring in a team of nationally recognized experts to analyze the Capitol's systems and determine the cause of these problems. Engineers, architects, and specialists in heating, cooling, plumbing, electrical systems, fire suppression systems, historic artifacts, and historic plaster and art from across the country began to study the building. They installed environmental monitors and crawled through the sub-basement on their hands and knees to find rusting pipes, corroding electrical boxes, and leaking pipes.

The news wasn't good. Not only are the Capitol's systems old—they're actively failing. Many of them could break down completely at any time, putting the building, and the people in it, at significant risk.



This cast iron pipe in the Capitol's sub-basement is nearly filled with corrosion.

Image Courtesy of The Christman Company

Armed with this knowledge, the Commission realized that these fixes couldn't be made piecemeal. The Capitol's systems are complex, and were custom-crafted for the needs of this building. In order to fully address these issues, the Capitol's systems will need to be completely overhauled.

At present the Capitol's staff is continuing to work with this team of experts to design a major Capitol Infrastructure Upgrade Project that will address these problems in a holistic fashion. At the same time the Commission continues its work to educate the public, the legislature, staff, and other state officials about the problems facing the building, and seek funding for the future work. By working to find creative solutions the MSCC will continue to preserve our historic Capitol.

Crawl through the sub-basement and see the Capitol's failing infrastructure yourself in a video at www.capitol.michigan.gov.

Have questions about an MSCC project?

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Want to learn more about Capitol tours, events, or history?

Visit www.capitol.michigan.gov



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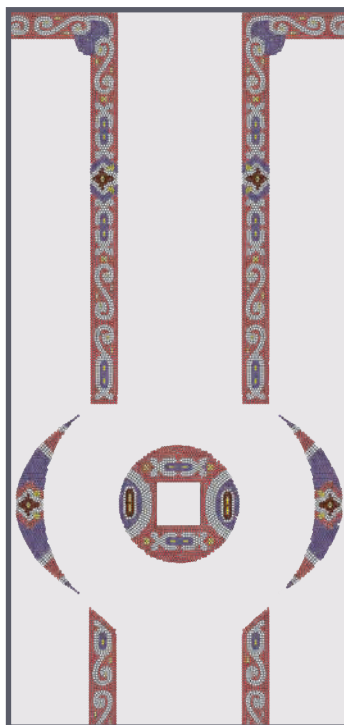
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Annual Flower Bed Redesign Almost Complete

In 2016 the Michigan State Capitol Commission initiated a major restoration of Capitol Square that included modifications to the Capitol's central walkway, the introduction of new historic reproduction lamp posts, and an expansion to the Capitol's annual flower beds. The project ended late in the summer, forcing the Commission to forgo installing annuals in the newly designed beds.

This May the MSCC will introduce a new Victorian-inspired design in the expanded annual flower beds. Crafted by Capitol Events Coordinator Barb Thumudo and Capitol Artist Joshua Risner, the plan will feature over 10,000 colorful flowers. Interested volunteers who would like to participate in the Capitol's annual planting day on Tuesday, May 23, 2017, should contact Barb at 517-373-9617 or bthumudo@legislature.mi.gov to sign up.



The 2017 design features motifs found in the Capitol's decorative art.

Image Courtesy of Barb Thumudo and Joshua Risner

The MSCC would like to thank the Kalamazoo Valley Plant Growers Co-Op for their generous annual donation of beautiful flowers for this project!

Concession Shop Closing

The Capitol Concession Snack Shop has closed its doors. However, vending machines located in the Capitol's west wing on the ground floor will continue to be maintained. The Capitol's ATM will be relocated within the west wing on the ground floor.



The MSCC and Governor Snyder partnered to install two new park benches on Capitol Square.

Image Courtesy of Valerie Marvin